

### **REMARKS**

This Application has been reviewed in light of the Office Action dated July 30, 2010. Claims 1-15 are pending in this Application. Claims 1-15 stand rejected. Applicants respectfully traverse all rejections. New claims 16 and 17 are added herein. Applicants respectfully submit no new matter is added by the addition of new claims 16 and 17. Support for new claims 16 and 17 is found throughout the specification as originally filed, for example on page 6, lines 33-34, and Figure 2.

#### **Rejection of Claims 1-10, and 14-15 Under 35 U.S.C. §103**

The Examiner rejected claims 1-10, and 14-15 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,301,756 to Relyea et al. (hereinafter “Relyea”) in view of U.S. Patent No. 4,043,397 to Glowienke (hereinafter “Glowienke”). Applicants respectfully traverse this rejection.

The Examiner has acknowledged that “Relyea et al. does not teach directing a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-like shape.” Office Action, page 3. However, the Examiner erroneously asserted that “Glowienke et al. does teach directing a plurality of single jets expelled from the orifices so that they intersect one another (Fig. 6, 19) to form a single uniform jet having a flat curtain-like shape (Fig. 1, 34).” Office Action, page 3.

Contrary to the Examiner’s assertion Glowienke does not disclose or suggest “...a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 1, which is representative of Applicants’ independent claims 5 and 7. Figures 1 and 6, of Glowienke, referenced by the Examiner do not illustrate “a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-like shape.” Figure 6, of Glowienke, clearly illustrates a nozzle configured to a diverging spray pattern and does not illustrate intersecting jets at all, and thus makes no mention of “a plurality of single jets expelled from the orifices so that they intersect one another.” Figure 1, of Glowienke,

illustrates a sectional view of the spray pattern, and as illustrates none of the jets as intersecting one another. Further, the fact that Glowienke does not disclose or suggest "...a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-like shape," can be seen in Figure 2, of Glowienke. Figure 2, of Glowienke, illustrates the spray pattern quite clearly. As illustrated in Figure 2, of Glowienke, none of the spray lines intersect one another. Rather, as illustrated in Figure 2, of Glowienke, the spray pattern is illustrated as separate spray lines. Thus, Applicants submit that like Relyea, Glowienke does not disclose or suggest "...a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-like shape," as recited in Applicants' independent claim 1, which is representative of Applicants' independent claims 5 and 7.

With regard to independent claim 7, the Examiner has acknowledged that "Relyea et al. does not teach the orifices being directed obliquely forward such that the farther away from the front of the end of the nozzle a single orifice resides, the larger an acute angle between the middle axis of the orifice and the middle axis of the nozzle..." Office Action, page 5. However, the Examiner erroneously asserted that "Glowienke et al. does teach the orifices being directed obliquely forward such that the farther away from the front of the end of the nozzle a single orifice resides, the larger an acute angle between the middle axis of the orifice and the middle axis of the nozzle (Fig. 6)..." Office Action, page 5.

Contrary to the Examiner's assertion Glowienke does not disclose or suggest "...the orifices being directed obliquely forwards such that the farther away from the front end of the nozzle a single orifice resides, the larger an acute angle between the middle axis of the orifice and the middle axis of the nozzle," as recited in Applicants' independent claim 7. Rather, Figure 6, of Glowienke, referenced by the Examiner clearly illustrates that all of the openings on the nozzle are on the front facing portion of the nozzle. Thus, Glowienke does not disclose or suggest orifices farther away from the front end of the nozzle having a larger acute angle between the middle axis of the orifice and the middle axis of the nozzle.

Additionally, even if Glowienke is read to disclose a plurality of single jets expelled from the orifices so that they intersect one another to form a single uniform jet having a flat curtain-

like shape, Applicants respectfully submit that Relyea and Glowienke teach away from one another. Glowienke discloses “a water pipe having a spray nozzle on one end with a 180 degree bend adjacent to said spray nozzle.” Glowienke, Col. 1, lines 50-52. The pipe, in Glowienke is handheld, and “the pipe 11, with hose line 13 and nozzle 16 in place, is taken to a floor level 28 (FIG. 1) one floor below the floor level 29 on which the fire is located and is extended out through the window opening 31.” Glowienke, Col. 3, lines 1-4. Thus, the tool disclosed in Glowienke is not a piercing tool for fire fighting at all.

The nozzle of Glowienke cannot be utilized as a piercing tool. Glowienke discloses a “spray nozzle 16 (FIGS. 6, 7 and 8), which...has its forward or discharge end 18 flattened in one direction (FIG. 7) and widened in the other direction (FIG. 6). Glowienke, Col. 2, lines 45-49. According to Glowienke, “the nose 19 of the nozzle is arched outwardly toward its center and it is formed with a honey-combed discharge.” Glowienke, Col. 2, lines 49-51. The tool disclosed in Glowienke teaches that the nozzle widens towards the discharging end, which is opposite to basic idea of a piercing tool wherein a tool with a sharp tip is needed. Thus, the tool disclosed in Glowienke is not designed to pierce and cannot pierce a shell of a burning building. Applicants respectfully submit that on the basis of the teaching in Glowienke one of ordinary skill in the art could not have modified the disclosure of Relyea to arrive at Applicants’ claimed piercing tool having a plurality of single jets expelled from the orifices of the nozzle so that they intersect one another to form a single uniform jet having a flat curtain-like shape.

Since Applicants’ claimed invention is not found in any cited reference, alone or in combination thereof, or suggested anywhere within the art, it appears that in creating this obviousness rejection the Examiner gleaned knowledge from Applicants’ disclosure contrary to *KSR*, which states “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

In any event, Applicants submit that the teachings of Relyea and/or Glowienke alone or in combination do not arrive at Applicants’ claimed invention. Applicants’ claimed invention is patentably distinct from that of Relyea and/or Glowienke as neither reference discloses or suggests at least “...a plurality of single jets expelled from the orifices so that they intersect one

another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 1, which is representative of Applicants’ independent claims 5 and 7. For at least this reason, Applicants respectfully submit that Relyea and/or Glowienke alone or in combination do not render independent claims 1, 5, and 7, and by extension all other claims which are dependent thereupon, including claims 2-4, 6, 8-10, and 14-15, obvious to one skilled in the art. Accordingly, Applicants respectfully submit that the rejection of claims 1-10, and 14-15 under 35 U.S.C. § 103 is improper and should be withdrawn. Reconsideration is respectfully requested.

### **Rejection of Claim 11 Under 35 U.S.C. §103**

The Examiner rejected claim 11 under 35 U.S.C. §103(a) as being unpatentable over Relyea in view of Glowienke as applied to claims 1-10, and 14-15 above, and further in view of U.S. Patent No. 2,246,797 to Geddes (hereinafter “Geddes”). Applicants respectfully traverse this rejection.

As described above, Relyea and/or Glowienke alone or in combination do not disclose or suggest at least “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7, which claim 11 is dependent thereupon.

Applicants respectfully submit that Geddes does not cure the deficiencies of Relyea and/or Glowienke. Geddes do not disclose or suggest “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7. Rather, Geddes discloses a breaching nozzle for a fire hose “whereby effective streams of water may almost instantaneously be introduced into the interior spaces of building structures to combat fires therein.” Geddes, Col. 1, lines 2 – 6. Thus, Applicants submit that like Relyea and Glowienke, Geddes does not disclose or suggest “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7.

For at least this reason, Applicants respectfully submit that Relyea, Glowienke and/or Geddes alone or in combination do not render independent claim 7, and by extension all other

claims which are dependent thereupon, including claim 11, obvious to one skilled in the art. Accordingly, Applicants respectfully submit that the rejection of claim 11 under 35 U.S.C. § 103 is improper and should be withdrawn. Reconsideration is respectfully requested.

**Rejection of Claims 12 and 13 Under 35 U.S.C. §103**

The Examiner rejected claims 12 and 13 under 35 U.S.C. §103(a) as being unpatentable over Relyea in view of Glowienke as applied to claims 1-10, and 14-15 above, and further in view of Geddes and U.S. Patent No. 4,435,891 to Nicholson (hereinafter “Nicholson”). Applicants respectfully traverse this rejection.

As described above, Relyea, Glowienke and/or Geddes alone or in combination do not disclose or suggest at least “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7, which claims 12 and 13 are dependent thereupon.

Applicants respectfully submit that Nicholson does not cure the deficiencies of Relyea, Glowienke and/or Geddes. Nicholson do not disclose or suggest “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7. Rather, Nicholson discloses a fan spray nozzle machined in a wall of the water header to generate a desirable spray pattern. Nicholson, Col. 1, lines 29 – 31. Thus, Applicants submit that like Relyea, Glowienke, and Geddes, Nicholson does not disclose or suggest “...a plurality of single jets which intersect one another to form a single uniform jet having a flat curtain-like shape,” as recited in Applicants’ independent claim 7.

For at least this reason, Applicants respectfully submit that Relyea, Glowienke, Geddes and/or Nicholson alone or in combination do not render independent claim 7, and by extension all other claims which are dependent thereupon, including claims 12 and 13, obvious to one skilled in the art. Accordingly, Applicants respectfully submit that the rejection of claims 12 and 13 under 35 U.S.C. § 103 is improper and should be withdrawn. Reconsideration is respectfully requested.

**New Claims 16 and 17**

New independent claim 16, which is representative of new independent claim 17, recites “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” Applicants respectfully submit that Relyea does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” Rather, Relyea discloses a piercing nozzle 192 having “a body portion 194, a tapered portion 196 of a piercing tip that has orifices 200 therein and a penetrating tip 198.” Relyea, Col. 10, lines 35-38. According to Relyea, “[t]he outer portion 198 of the piercing nozzle is a penetrating tip preferably made of chrome and is threadedly attached to the portion 196 by means of threads 197.” Relyea, Col. 10, lines 53-56. The penetrating tip of Relyea is threadedly attached to the tapered portion 196 which has orifices 200 therein, and is not attached between a front most pair of the plurality of orifices. Thus, Relyea does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17.

Applicants respectfully submit that Glowienke, Geddes, and/or Nicholson alone or in combination do not cure the deficiencies of Relyea. Glowienke does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” Glowienke makes no mention of a substantially conical nozzle or a solid front most portion between a front most pair of the plurality of orifices. Rather, Glowienke discloses “the nose 19 of the nozzle is arched outwardly toward its center and it is formed with a honey-combed discharge.” Glowienke, Col. 2, lines 49-51. Thus, Applicants submit that Glowienke does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17.

Applicants respectfully submit that Geddes does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a

front most pair of the plurality of orifices...,” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17. Rather, Geddes discloses a breaching nozzle for a fire hose “whereby effective streams of water may almost instantaneously be introduced into the interior spaces of building structures to combat fires therein.” Geddes, Col. 1, lines 2 – 6. According to Geddes, “[t]he head is provide with a central chamber or bore 40 communicating with the bore of the body 20 and laterally opening discharge ports are provided extending from the bore through the surfaces 34 between the groins 36.” Geddes, Col. 4, lines 20-24. Thus, Applicants submit that Geddes does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...,” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17.

Applicants respectfully submit that Nicholson does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...,” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17. Rather, Nicholson discloses a fan spray nozzle machined in a wall of the water header to generate a desirable spray pattern. Nicholson, Col. 1, lines 29 – 31. Thus, Applicants submit that Nicholson does not disclose or suggest “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...,” as recited in Applicants’ new independent claim 16, which is representative of Applicants’ new independent claim 17.

For at least this reason, Applicants respectfully submit that Relyea, Glowienke, Geddes and/or Nicholson alone or in combination do not render new independent claims 16 and 17 unpatentable. Accordingly, Applicants respectfully submit that new independent claims 16 and 17 are patentable over Relyea, Glowienke, Geddes and/or Nicholson alone or in combination. Reconsideration is respectfully requested.

**CONCLUSION**

For at least the reasons set forth above, reconsideration and allowance of this Application are believed to be in order, and such action is hereby solicited. If any points remain an issue which the Examiner feels may be best resolved through a telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below. The Examiner is invited and encouraged to telephone the undersigned with any concerns in furtherance of the prosecution of the present Application.

Please charge any deficiency as well as any other fee(s) which may become due at any time during the pendency of this Application, or credit any overpayment of such fee(s) to Deposit Account No. 50-2896.

Respectfully submitted,

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Dated:

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